Parcel B - Phase II Soil Characterization
Boeing Realty Company
C-6 Facility
Los Angeles, California

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PARCEL B - PHASE II SOIL CHARACTERIZATION
BOEING REALTY CORPORATION C-6 FACILITY
LOS ANGELES, CALIFORNIA

EXECUTIVE SUMMARY

This report discusses the Phase II Soil Characterization for Parcel B of the Boeing Realty Corporation (BRC) C-6 Facility (Facility) located at 19503 South Normandie Avenue, Los Angeles, California. The characterization was completed under the oversight of the Los Angeles Region of the Regional Water Quality Control Board (RWQCB) as the lead agency, with input from the Department of Toxic Substance Control (DTSC). The Parcel B Report is the second of three reports that cover most of the Facility. The report sections include:

1.0 Introduction

Section 1.0 describes Parcel B and discusses the purpose of the investigation.

2.0 Parcel B Description

Section 2.0 provides a brief history of the Facility, with particular emphasis on Parcel B, which encompasses Areas 2 and 6. Hydrogeologic setting is summarized, based on published reports and previous work, and geologic units identified from the Phase II Soil Characterization are described.

3.0 Program Design

Section 3.0 presents a detailed description of the Facility-wide soil characterization program. It discusses the historical use of each potential area of concern in Parcel B and explains the rationale used in determining the analytical program.

4.0 Soil Sampling and Analytical Methods

Section 4.0 describes the soil sampling program, including drilling, sampling and analytical methodology, chain of custody, and QA/QC program.

5.0 Investigation Results

Section 5.0 discusses the results from each area and presents findings in tables and figures. The complete laboratory reports are provided in appendices to the report.

6.0 Conclusions

Section 6.0 summarizes the conclusions resulting from the investigation.

7.0 References Cited

Section 7.0 presents a list of references cited throughout the report.

PURPOSE

The purpose of the Phase II Soil Characterization was to characterize the nature of the soils and to identify areas of concern in Parcel B. These data will provide support to develop a risk assessment, to plan future groundwater investigations, and for future feasibility studies and soil remediation, if required. The soil characterization included the physical properties of the soils, the subsurface distribution of the soil types, the identification of areas of potential concern, and the nature and extent of any chemicals of potential concern (COPCs) within the soils.

LOCATION AND DESCRIPTION OF AREAS 2 AND 6

The Facility is located at 19503 South Normandie Avenue in Los Angeles, California (Figure 1). The Facility is bordered on the north by West 190th Street, on the east by railroad tracks and South Normandie Avenue, on the south by Montrose Chemical and residential properties, and on the west by Western Avenue, Capitol Metals, and International Light Metals (ILM).

Areas 2 and 6 occupy approximately 52 acres in the southwestern portion of the Facility. Area 2, comprising approximately 33 acres, is bordered on the north by Capitol Metals and Area 6, on the east by a Los Angeles Department of Water and Power (LADWP) electrical substation, former Montrose Chemicals, and Jones Chemicals, on the south by residential properties, and on the west by Western Avenue. Area 6, comprising approximately 19 acres, is bordered on the north by portions of the Facility including buildings 4, 11, 13, 14 and 15, on the east by portions of the Facility including buildings 2 and 3, on the South by Area 2, and on the west by Capitol Metals and ILM (Figure 2).

GEOLOGY AND HYDROGEOLOGY

Hydrogeologic setting of the Facility was determined mainly from reference to reports published by the U.S. Geological Survey and the California Department of Water Resources. The Facility is at approximately 50 feet mean sea level (MSL) elevation on the Torrance Plain, a Pleistocene-age marine surface. Near-surface sediments underlying the Facility are assigned to the Lakewood Formation and include marine and continental deposits of late Pleistocene age. Aquifers underlying the Facility include the Semiperched and Gage Aquifers within the Lakewood Formation and the Lynwood and Silverado Aquifers in the deeper San Pedro Formation. Previous groundwater investigations and monitoring at the Facility established that the uppermost groundwater is at 60 to 70 feet depth in the Semiperched Aquifer, with a hydraulic gradient to the south-southeast, measured at 3.5 feet per mile in late 1996.

Fifteen continuous core borings were drilled throughout the Facility during the Phase II Soil Characterization study. One is located in Area 2 and two are located in Area 6 (Figure 3). Extensive information regarding the soils within 50 feet below the ground surface (bgs) at the Facility was developed from the drilling and geologic logging in the study. Four distinct subsurface units were identified (Q1 through Q4). Three of these soil units correlated over the entire Facility (Q1, Q2, and Q3), while the fourth (Q4) pinches out on the northwest and dips below the depth drilled on the east. The uppermost soils at the Facility consist predominantly of clay and silt. These fine-grained soils are present to about 22 feet bgs on the west and thicken to about 45 feet on the east. Soils below these depths are predominantly sand and silty sand to the 50-foot maximum depth drilled.

FIELD PROGRAM

A Field Sampling Plan was developed based on the findings of the Phase I environmental site assessments of the Facility. The Plan identified the individual areas of potential concern and reviewed the history of the areas. Based on these data, specific analytical testing was proposed at each location. The Plan was reviewed and approved by the RWQCB and DTSC.

Fifty-two soil borings were drilled and 229 soil samples were collected for analysis in the locations investigated for the Phase II Soil Characterization of Parcel B. The soil borings were drilled with either direct hydraulic-push or hollow-stem auger drilling methods. Borings to 10 feet and 25 feet bgs were drilled and sampled by direct-push methods. Borings to 50 feet bgs were drilled by hollow-stem auger.

All soil samples were analyzed for volatile organic compounds (VOCs) and total recoverable petroleum hydrocarbons (TRPH) by EPA Methods 8260 and/or 8010/8020, and 418.1, respectively. Selected additional analyses were performed on an area-by-area basis and include total petroleum hydrocarbons by EPA Method 8015 modified, semi-volatile organic compounds (SVOCs) by EPA Method 8270 and Title 22 metals, including hexavalent chromium (EPA Methods 6010, 7196, and 7471), polychlorinated biphenyls (PCB) (EPA Method 8080), and pesticides (EPA Method 8080). Most of the samples were first analyzed on site for VOCs and TRPH by state-certified mobile laboratories. If the on-site mobile laboratory analyses detected total VOCs greater than 200 micrograms/kilogram (μg/kg), the samples were also analyzed in a state-certified off-site stationary laboratory for confirmation. As an additional quality assurance (QA) check, the off-site stationary laboratory also analyzed 10 percent of the samples for which the mobile laboratory reported VOCs and TRPH as not detected.

SUMMARY OF FINDINGS

Parcel B, which consists of Areas 2 and 6, was divided into areas of potential concern based on previous facility history. Each of the areas of potential concern were investigated individually. Area 2 was divided into five areas of potential concern (Figure 2):

- Tool Storage Yard
- Scrap Storage Yard
- Buildings 54, 55, and 56
- Area borders with LADWP Electrical Substation
- Area border with Montrose Chemical.

Area 6 was divided into two areas of potential concern (Figure 2):

- Area border with International Light Metals
- Parking Lot

None of the areas of potential concern investigated in Areas 2 and 6 were found to contain COPCs at levels such that they were designated areas of concern. Findings regarding the potential areas of concern are summarized below.

AREA 2

Tool Storage Yard

The Tool Storage Yard is used to store master tools used to make aircraft parts. Most of the tools are composed of lead. However, this area did not contain lead in concentrations, distribution, or frequency of occurrence to be designated as an area of concern.

No VOCs were detected in this area. Petroleum hydrocarbons were detected at low concentrations in 25 of 53 soil samples. TRPH (418.1) was detected at concentrations less than 270 mg/kg in 23 of the samples. TRPH was detected at 1.5 feet bgs in boring 2-11B at 3,200 mg/kg and at 4 feet bgs in boring 2-15 at 6,000 mg/kg, but was not detected in the deeper samples from borings 2BB-2-11B and 2BB-2-15. Motor oil-like hydrocarbons (8015M) were detected in seven samples at concentrations less than 710 mg/kg, and at 4 feet bgs in boring 2-17 at 3,000 mg/kg. The only SVOCs detected were bis(2-ethylhexyl)-phthalate and phenol. Bis(2-ethylhexyl)-phthalate was detected at concentrations ranging from 120 μg/kg to 270 μg/kg in seven of 53 samples at depths ranging from 1 foot bgs to 10 feet bgs, and phenol was detected at 170 μg/kg in the 1-foot bgs sample from boring 2-16.

Barium, chromium, cobalt, copper, nickel, vanadium, and zinc were detected at concentrations that appear typical of background values. Lead was detected in two borings, 2-16 and 2-11B at 1 foot to 2 feet bgs, respectively, at concentrations below 23 mg/kg, which is well below the TTLC of 1,000 mg/kg and less than ten times the STLC.

Scrap Storage Yard

The Scrap Storage Yard is used to store miscellaneous equipment and material, including a waste oil pump and roll-off bins that were used to collect and transport waste oil. However, this area did not contain petroleum hydrocarbons in concentrations high enough to be designated as an area of concern.

PCE was detected in boring 2-21 at a concentration of 7.8 μg/kg and 5.2 μg/kg in the 1-foot and 4-foot bgs samples, respectively. Petroleum hydrocarbons, including TRPH (418.1) and motor oil-like hydrocarbons (8015M), were detected at low concentrations ranging from 16 mg/kg to 450 mg/kg in 11 of 21 samples at shallow depths of 1 feet to 4 feet bgs. SVOCs were detected in four of 27 samples at concentrations of less than 230 μg/kg. Certain SVOCs — benz(a)anthracene, chrysene, fluoranthene, phenanthrene, and pyrene — were detected in the 4-foot bgs sample from boring 2-21 at concentrations ranging from 150 mg/kg to 470 mg/kg. Bis(2-ethylhexyl)-phthalate was detected at concentrations ranging from 110 μg/kg to 230 μg/kg in four samples from borings 2-21, 2-27, and 2-30 at depths to 10 feet bgs.

Barium, chromium, cobalt, copper, nickel, vanadium, and zinc were detected at concentrations that appear typical of background values. Lead was reported in boring 2-28 at 8.6 mg/kg and 2.7 mg/kg in the 1-foot and 4-foot bgs samples. These lead concentrations are well below the TTLC of 1,000 mg/kg and less than ten times the STLC.

Buildings 54, 55 and 56

Buildings 54, 55 and 56 are used for office space and storage of forklifts, service vehicles, and tools. A transformer substation containing PCBs is located adjacent to Building 54. Staining around and on the transformer pad indicated that oil has leaked from the transformer. However, no PCBs were detected in the soil samples collected from this area.

No VOCs were detected in this area. Petroleum hydrocarbons, including TRPH (418.1) and motor oil-like hydrocarbons (8015M), were detected in the samples from boring 2-1 at concentrations ranging from 12 mg/kg to 150 mg/kg at depths ranging from 1 foot to 10 feet bgs.

Area Borders with LADWP Electrical Substation

An LADWP electrical substation is located adjacent to the southeastern corner of Area 2. The electrical substation contains transformers that may contain PCBs. However, no PCBs were detected in the soil samples tested for the 2BB investigation of Parcel B of the BRC C-6 Facility.

No VOCs were detected in this area. Petroleum hydrocarbons, including TRPH (418.1) and motor oil-like hydrocarbons (8015M), were detected in seven of 24 samples at concentrations ranging from 11 mg/kg to 360 mg/kg. Six of these detections were at 1 foot or 4 feet bgs, and one detection (11 mg/kg) was at 25 feet bgs. The only SVOC detected in this area was bis(2-ethylhexyl)-phthalate, which was detected at 3,600 μg/kg and 4,400 μg/kg in the 15-foot and 25-foot bgs samples collected from boring 2-31, respectively.

Barium, chromium, cobalt, copper, nickel, vanadium, and zinc were detected at concentrations that appear typical of background values.

Area Border with Montrose Chemical

The Montrose Chemical facility is located adjacent to the eastern boundary of Area 2. Montrose is a known source of contamination to soil and groundwater and is currently on the National Priority List (NPL) due to releases of DDT and other chemicals to the environment. However, no DDT or other pesticides were detected in the samples tested for the 2BB investigation of Parcel B of the BRC C-6 Facility.

PCE and TCE were both detected in only one soil sample, 2-34 at a depth of 15 feet bgs and at a concentration of 6.7 μg/kg and 5.1 μg/kg, respectively. Chloroform was detected in the 15-foot bgs samples from borings 2-34 and 2-35 at 6.3 μg/kg and 17 μg/kg, respectively. Petroleum hydrocarbons as TRPH (418.1) were detected in four of 18 samples at concentrations ranging from 12 mg/kg to 56 mg/kg. The highest concentration (56 mg/kg) was detected at 1 foot bgs in boring 2-35, while concentrations of 12 mg/kg and 13 mg/kg were detected in boring 2-35 at 20 feet and 25 feet bgs, respectively. The only SVOC detected in this area was bis(2-ethylhexyl)-phthalate, which was detected at concentrations ranging from 120 μg/kg to 680 μg/kg in borings 2-33 and 2-34 at depths ranging from 1 foot bgs to 20 feet bgs. No pesticides were detected in this area.

Barium, chromium, cobalt, copper, nickel, vanadium, and zinc were detected at concentrations that appear typical of background values.

AREA 6

Area Border with International Light Metals

ILM is located adjacent to the western boundary of Area 6. ILM is a RCRA site and a known source of soil and groundwater contamination.

TCE was detected in 25 of 40 samples collected from all 6 borings drilled in this area at concentrations ranging from 5.9 μg/kg to 52 μg/kg. Depending on the boring, it was detected at depths ranging from 1 to 55 feet bgs. Petroleum hydrocarbons as TRPH (418.1) were detected in three samples, two from boring 6-5 and one from boring 6-6, at concentrations ranging from 23 mg/kg to 41 mg/kg, and at shallow depths ranging from 1.5 feet to 4.5 feet bgs. No PCBs were detected in this area.

Barium, chromium, cobalt, copper, nickel, vanadium, and zinc were detected at concentrations that appear typical of background values.

Parking Lot

This area comprises most of Area 6 and has historically been primarily a parking lot.

No VOCs were detected in this area. Petroleum hydrocarbons, including TRPH (418.1) and motor oil-like hydrocarbons (8015M), were detected in 17 of 61 samples at concentrations ranging from 16 mg/kg to 200 mg/kg, and at depths ranging from 1 foot to 10 feet bgs. No PCBs were detected in this area.

Barium, chromium, cobalt, copper, nickel, vanadium, and zinc were detected at concentrations that appear typical of background values.

1.0 INTRODUCTION

Kennedy/Jenks Consultants performed a Phase II Soil Characterization of the Boeing Realty Corporation (BRC) C-6 Facility (Facility) in April and May, 1997. A Field Sampling Plan (FSP) was prepared for the soil characterization and reviewed and approved by the Regional Water Quality Control Board, Los Angeles Region (RWQCB), the lead agency, and the Department of Toxic Substance Control (DTSC).

This section provides a description of the general location of the Facility and Parcel B, which is comprised of Areas 2 and 6 of the Facility. The Section also presents the purpose of the Phase II Soil Characterization program.

1.1 C-6 Facility Location

The Facility is approximately 170 acres, located at 19503 South Normandie Avenue in Los Angeles, California (Figure 1). The Facility is bordered on the north by West 190th Street, on the east by railroad tracks and South Normandie Avenue, on the south by Montrose Chemical and residential properties, and on the west by Western Avenue, Capitol Metals, and International Light Metals (ILM).

Parcel B, which consists of Areas 2 and 6, occupies approximately 52 acres in the southwestern portion of the Facility. Area 2, comprising approximately 33 acres, is bordered on the north by Capitol Metals and Area 6, on the east by the Los Angeles Department of Water and Power (LADWP) electrical substation, former Montrose Chemical, and Jones Chemical, on the south by residential properties, and on the west by Western Avenue. Area 6, comprising approximately 19 acres, is bordered on the north by portions of the Facility including buildings 4, 11 13, 14 and 15, on the east by portions of the Facility including buildings 2 and 3, on the south by Area 2, and on the west by Capitol Metals and ILM (Figure 2).

1.2 Purpose

The purpose of the Phase II Soil Characterization was to systematically identify and characterize the nature of the soils above groundwater and areas of concern throughout the Facility, and to support future site remediation, feasibility studies, groundwater investigations, and the ongoing risk assessment. The soil characterization included the physical properties of the soils, the subsurface distribution of the soil types, and the nature and extent of chemicals of potential concern (COPCs) within the soils.

2.0 AREAS 2 AND 6 DESCRIPTION

This section provides a history of the Facility and a description Areas 2 and 6. This section also presents a discussion of the regional and local geology and hydrogeology.

2.1 Description and History of Areas of Investigation

A review of aerial photographs indicated that the Facility was farmland prior to the 1940s (Kennedy/Jenks Consultants, March 1996). The Facility was first developed by the Defense Plant Corporation in 1941, as part of an aluminum reduction plant. The plant was operated by the Aluminum Company of America until late 1944 (Camp, Dresser & McKee, 1991). In 1948, the property was acquired by the Columbia Steel Company. In March 1952, the U.S. Navy purchased the property from the Columbia Steel Company and established Douglas Aircraft Company (DAC) as the contractor and operator of the Facility for the manufacturing of aircraft and aircraft parts. DAC purchased the Facility from the Navy in 1970 (Camp, Dresser & McKee, 1991). The Facility was transferred to BRC in 1996.

Areas 2 and 6 were investigated based on potential areas of concern and to support the ongoing risk assessment. The discussions that follow focus on the general uses of each area. Section 3.0 discusses the historical use of each building and potential area of concern within Areas 2 and 6 based on Phase 1 environmental site assessments conducted by Kennedy/Jenks Consultants in March 1996 and May 1997a.

2.2 Regional Geology And Hydrogeology

The geology and hydrogeology of the region surrounding the Facility were determined mainly from reference to reports published by the U.S. Geological Survey (USGS) (Poland and others, 1959) and the California Department of Water Resources (DWR), (1961). Reference also was made to previous reports prepared by Kennedy/Jenks Consultants for the Facility.

The Facility is located on a broad plain at an elevation of approximately 50 feet MSL. The DWR and USGS define this area as the Torrance Plain, a Pleistocene-age marine surface and a subdivision of the Coastal Plain of Los Angeles and Orange Counties. The ground surface in this area is generally flat with an eastward gradient of about 20 feet per mile (less than one-half percent). Surface drainage is generally toward the Dominguez Channel, about a mile to the east. The Dominguez Channel, in turn, flows southeastward toward the Los Angeles and Long Beach Harbors in San Pedro Bay.

The surface sediments in this area are assigned to the Lakewood Formation (DWR, 1961), a unit defined to include essentially all of the upper Pleistocene sediments in the Los Angeles Coastal Plain area. The Lakewood Formation includes deposits of both marine and continental origin, representing stream transport and sedimentation along the Pleistocene marine plain. In the Facility area, the Lakewood Formation may include the Semiperched Aquifer, the Bellflower Aquiclude, and the Gage Aquifer. The Semiperched Aquifer includes deposits described as Terrace Cover (Poland et al, 1959). Extent and thickness of this unit is not rigorously defined, but appears to include the near-surface water-bearing units in the area of the Facility. The Bellflower Aquiclude is described as a heterogeneous mixture of continental, marine, and wind-blown sediments, mainly consisting of clays with sandy and gravely lenses (DWR, 1961). The base of the Bellflower Aquiclude is about 100 feet below sea level (about 150 feet bgs) in the Facility area. The Gage Aquifer is a water-bearing zone of fine to medium sand and gravel confined by the Bellflower Aquiclude. It is reported to be about 40 feet thick in the Facility area and is described as being of secondary importance as a water source (DWR, 1961).

The Lakewood Formation is underlain by the Lower Pleistocene San Pedro Formation, which continues to about 1,000 feet in depth in the Facility area. Major water-bearing zones within the San Pedro Formation are the Lynwood Aquifer and the Silverado Aquifer. These are reported to be at depths of about 300 and 500 feet, respectively, in the Facility area (DWR, 1961). The Silverado is an important groundwater source in the Coastal Plain and is considered a source of drinking water (DWR, 1961).

2.3 Local Geology And Hydrogeology

2.3.1 Local Geology

The drilling program conducted during the Phase II Soil Characterization provided extensive information with regard to the sediments within the upper 50 feet at the Facility. The drilling program included 36 hollow-stem auger borings and 174 direct-push probes, totaling approximately 4,700 linear feet. The drilling program for Areas 2 and 6 included nine hollow-stem auger borings and 43 direct-push borings totaling about 1,046 linear feet. Boring locations are shown on Figure 2 and boring logs are in Appendix A.

To allow detailed examination of the subsurface soils, 15 borings at representative locations within the Facility were continuously sampled from the surface to 50 feet bgs. One of these core borings is located in Area 2 and two are located in Area 6 (Figure 3). The detailed logs from these borings were used to construct the generalized cross-sections that are presented in Figures 4 through 6. Logs from the other, shallower borings are consistent with the soil units shown on the generalized cross-sections.

Several distinctive soil units were recognized in the subsurface and can be correlated between borings, as shown on Figures 4 through 6. For convenience in this text, the subsurface soil units are informally designated Units Q1 through Q4.

Unit Q1: Unit Q1 is a layer of silty clay and sandy clay encountered at the surface or just below the pavement or engineered fill soils over the entire Facility. This clay is typically dark brown to dark reddish brown in color and medium stiff to hard. It has moderate to high plasticity and is classified as CL or CH under the Unified Soil Classification System (USCS). Unit Q1 has a uniform thickness of about 5 feet along the west side of the Facility. It thickens to about 22 feet on the northeast corner of the Facility.

Unit Q2: Unit Q2 comprises a sequence of interbedded clayey silt, fine sandy silt, and fine silty sand with minor lenses of silty clay. The predominant USCS classifications are ML and SM. The Unit Q2 soils are brown, olive brown, and reddish brown in color and are generally medium dense. Unit Q2 is about 17 to 20 feet thick and the base is about 22 to 25 feet bgs along the west side of the Facility. The unit thickens to about 30 feet at the east side of the Facility. The base of Unit Q2 also slopes eastward, and occurs at depths of 45 to 50 feet along the east side of the Facility.

Unit Q3: Unit Q3 is an interval of fine and very fine sand with only minor silt. Soils in this interval generally are classified as SP and SP-SM under the USCS. This soil unit includes distinctive beds containing abundant shell fragments. The sand is mainly light yellowish brown to light yellowish gray in color. It has generally massive structure, and commonly is described as being similar to beach sand. The sand is generally dense, but has essentially no cohesion.

Unit Q3 is more than 28 feet thick on the west side of the Facility, extending from about 22 feet bgs to below the 50-foot depth drilled at the northwest corner of the Facility. However, in the southern part of the Facility, Unit Q3 is interlayered with Unit Q4, a wedge of fine silty sand and fine sandy silt.

Unit Q4: Unit Q4 was observed in borings in the southwestern and central part of the Facility. It pinches out in the northwestern part of the area and is likely below the depth drilled on the east. Maximum thickness of this soil unit is about 17 feet, on the southwest. Unit Q4 mainly contains fine silty sand (SM) and clayey silt (ML) with thin interbeds of silty clay and fine sand. These soils are generally yellowish brown in color and are medium dense to dense.

2.3.2 Local Hydrogeology

The uppermost groundwater at the Facility appears to be under water-table conditions at depths of 60 to 70 feet. Regionally, this uppermost groundwater is probably considered part of the Semiperched Aquifer discussed previously and is separated from the deeper zones by the Bellflower Aquiclude (Kennedy/Jenks Consultants, 1997b).

Monitoring wells at the Facility are completed in two zones. Most of the wells are completed at or near the semi-perched aquifer, with screened intervals ranging from 60 to 90 feet bgs. Two deeper wells, WCC-1D and WCC-3D, are completed in a deeper zone with screened intervals from 120 to 140 feet bgs (Woodward-Clyde Consultants, 1990).

Complete records of water-level measurements are included in the quarterly Groundwater Monitoring Summary Reports (Kennedy/Jenks Consultants, January 1997b). The hydraulic gradient in the uppermost groundwater is generally toward the south-southeast, toward a local low in the area of wells WCC-7S and WCC-12S. The December 1996 groundwater gradient was 6.6×10^{-6} ft/ft (3.5 ft/mile) (Kennedy/Jenks Consultants, 1997b).

Groundwater conditions at the Facility are known from previous investigations and from the quarterly groundwater monitoring program (Kennedy/Jenks Consultants, 1997b). Groundwater samples from 15 observation wells at the Facility have been sampled and analyzed on a quarterly basis since 1992. There are no groundwater monitoring wells located within Areas 2 and 6. The drilling for the Phase II Soil Characterization was entirely in the unsaturated zone and did not provide additional information on groundwater.

3.0 PROGRAM DESIGN

This section provides the details of the Phase II Soil Characterization program design, the rationale for soil boring placement, and analytical testing on an area-by-area and building-by-building basis.

3.1 Program Design

The soil sampling program was designed to detect COPCs throughout the Facility and, as such, is conservative throughout (Table 1). Supplemental samples and/or analyses were added to the program, where appropriate, to provide high confidence that COPCs would be adequately characterized. As described in Section 2.1, Areas 2 and 6 contain portions that have been used for storage and portions that have been parking lots throughout the history of the Facility (Figure 2). Soil sampling locations were placed in known storage areas, previously identified potential areas of concern, on a sampling grid with appropriate spacing to cover open areas, and border areas of particular interest.

To best describe the subsurface soils, soil borings were nominally completed to three different depths: 10 feet, 25 feet, and 50 feet bgs. The 10-foot and 25-foot soil borings were completed by direct-push technology and the 50-foot soil borings were completed by hollow-stem auger. Further detail of the drilling methodologies is presented in Section 4.1. Detailed geologic boring logs were made of each soil boring and those from Areas 2 and 6 are presented in Appendix A. All Push borings were continuously cored in their upper 10 feet. In addition, a total of fifteen 50-foot soil borings were continuously cored to total depth to provide detailed soils data across the Facility.

Thirteen of the 15 50-foot core borings were drilled and completed at the beginning of the Facility-wide soils characterization prior to assigning the 2BB Study designation. This includes boring 2-11, 6-4, and 6-17 in Parcel B. Two 50-foot core borings were included near the end of the study to supplement the original 13 core borings and contain the 2BB Study designation (2BB-1-38 and 2BB-36-14).

Field activities were initiated with selection of sampling locations, geophysical screening for underground obstructions, and coring of concrete paving to access subsurface soils. Supplemental geophysical screening and concrete coring were conducted during the drilling program when new borehole locations were included in the investigation.

Soil samples were collected from 1 foot, 4 feet, and 10 feet bgs in all borings. Where possible, the uppermost soil sample was collected from 6 inches bgs; however, in many instances a 6-inch sample was impractical due to either the deteriorated asphalt at the surface, fill, base materials for concrete, railroad ballast, or other surface disturbance. Soil samples were collected at 5-foot intervals below 10 feet depth in borings drilled to 25 feet bgs and on 10-foot intervals below 10 feet depth in 50 foot boreholes.

The program had one to three drilling rigs collecting soil samples each day and was designed to process approximately 50 to 60 soil samples per day.

Blank samples and confirmation analyses were used for QA in the field program. Daily rinsate blanks were used to check decontamination of sampling equipment. Daily travel blanks accompanied all samples shipped to the stationary laboratory. Ten percent of the samples showing non-detect results for EPA Methods 8260 and 418.1 from the on-site mobile laboratories were sent to the stationary laboratory for confirmatory analysis. And, EPA Method 8260 mobile, on-site laboratory results exceeding 200 micrograms per kilogram (μg/kg) total VOCs were also sent to the stationary laboratory for confirmation analysis. Original laboratory reports are presented in Appendix B.

3.1.1 Sample Identification

Soil samples were identified with a unique boring number and depth using a predetermined nomenclature. For the Parcel B Soil Characterization, an example identification code is:

2BB-2-5-10

Where

2BB- study designation

2- Area designation

5- boring number in that Area

10 nominal sample depth.

3.2 Rationale for Sampling Locations and Analytical Testing

The rationale for the sampling locations and analytical testing for each area of potential concern is based on a combination of the following factors:

- The locations of known past processes that used specific chemicals.

- The location of specific equipment of concern, such as electrical transformers, clarifiers, ASTs, USTs, and others.

- Locations that border areas of known or suspected contamination.

- Areas having no prior history of concern to provide a comprehensive data base on Facility soil conditions for use in future site remediation, feasibility studies, groundwater investigations, and risk assessment.

Sampling locations are shown on Figure 2. The following discussion presents a summary of sampling locations and analytical testing for Areas 2 and 6. Table 1 presents the overall soil sampling analytical program for Areas 2 and 6.

3.2.1 Area 2

Area 2 occupies approximately 33 acres in the southwestern portion of the Facility (Figure 1). Topography in Area 2 is essentially flat with an elevation of approximately 50 feet above mean sea level (MSL). The potential areas of concern within Area 2 include the tool storage yard, the scrap storage yard, Buildings 54 through 56, the borders with an LADWP electrical substation, and the border with Montrose Chemical (Figure 2). Area 2 contains railroad tracks that separate the tool storage yard from the scrap storage yard, and railroad spurs that divide the tool storage yard into north-south

trending strips. Although most manufacturing operations at the Facility have been inactive for approximately four years, storage of master tools and scrap in Area 2 is still ongoing. A limited amount of assembly and activities related to warehousing currently continue and the railroad spurs are still active.

3.2.1.1 Tool Storage Yard

The Tool Storage Yard is used to store master tools used to make aircraft parts. The area that comprises the Tool Storage Yard is delineated by railroad tracks on the southern and eastern sides of Area 2 (Figure 2). Nine railroad spurs divide most of the tool yard into north-south trending strips, and are flanked on both sides by tools. Most of the tools are stored in wooden crates in a wide variety of sizes. Some of the larger tools are neither covered nor crated, and are lying on open ground. Most of the tools are composed of lead.

Three small buildings (numbers 54, 55, and 56) located near the gate to the yard are used for office space and storage of forklifts, service vehicles, and tools.

Seventeen soil borings (2BB-2-3 through 2BB-2-18) were drilled throughout the Tool Storage Yard. Sixteen were pushed to a depth of 10 feet bgs, and one (2BB-2-11B) was drilled to a depth of 50 feet bgs using a hollow-stem auger. Soil samples were collected according to the depth scheme presented in Table 1 and analyzed for VOCs (8260 or 8010/8020), petroleum hydrocarbons (418.1 and/or 8015M), Title 22 metals (6010, 7196, and 7471) and semivolatile organic compounds (SVOCs) (8270).

3.2.1.2 Scrap Storage Yard

The Scrap Storage Yard comprises about 100,000 square feet in a long, narrow strip on the southern portion at Area 2 and eastern portion of Area 2, separated from the Tool Storage Yard by the railroad tracks (Figure 2). Unused miscellaneous equipment and material used to be stored in the area and included a chromic acid dip tank and wire mesh dip tank baskets, trash compactor, cyclone vents, refrigerators, a large quantity of steel beams and pipes, cement parking pylons, pumps, sheet metal, cinder blocks, tires, and railroad rails.

trending strips. Although most manufacturing operations at the Facility have been inactive for approximately four years, storage of master tools and scrap in Area 2 is still ongoing. A limited amount of assembly and activities related to warehousing currently continue and the railroad spurs are still active.

3.2.1.1 Tool Storage Yard

The Tool Storage Yard is used to store master tools used to make aircraft parts. The area that comprises the Tool Storage Yard is delineated by railroad tracks on the southern and eastern sides of Area 2 (Figure 2). Nine railroad spurs divide most of the tool yard into north-south trending strips, and are flanked on both sides by tools. Most of the tools are stored in wooden crates in a wide variety of sizes. Some of the larger tools are neither covered nor crated, and are lying on open ground. Most of the tools are composed of lead.

Three small buildings (numbers 54, 55, and 56) located near the gate to the yard are used for office space and storage of forklifts, service vehicles, and tools.

Seventeen soil borings (2BB-2-3 through 2BB-2-18) were drilled throughout the Tool Storage Yard. Sixteen were pushed to a depth of 10 feet bgs, and one (2BB-2-11B) was drilled to a depth of 50 feet bgs using a hollow-stem auger. Soil samples were collected according to the depth scheme presented in Table 1 and analyzed for VOCs (8260 or 8010/8020), petroleum hydrocarbons (418.1 and/or 8015M), Title 22 metals (6010, 7196, and 7471) and semivolatile organic compounds (SVOCs) (8270).

3.2.1.2 Scrap Storage Yard

The Scrap Storage Yard comprises about 100,000 square feet in a long, narrow strip on the southern portion at Area 2 and eastern portion of Area 2, separated from the Tool Storage Yard by the railroad tracks (Figure 2). Unused miscellaneous equipment and material used to be stored in the area and included a chromic acid dip tank and wire mesh dip tank baskets, trash compactor, cyclone vents, refrigerators, a large quantity of steel beams and pipes, cement parking pylons, pumps, sheet metal, cinder blocks, tires, and railroad rails.

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Three small buildings (numbers 54, 55, and 56) located near the gate to the yard are used for office space and storage of forklifts, service vehicles, and tools.

Seventeen soil borings (2BB-2-3 through 2BB-2-18) were drilled throughout the Tool Storage Yard. Sixteen were pushed to a depth of 10 feet bgs, and one (2BB-2-11B) was drilled to a depth of 50 feet bgs using a hollow-stem auger. Soil samples were collected according to the depth scheme presented in Table 1 and analyzed for VOCs (8260 or 8010/8020), petroleum hydrocarbons (418.1 and/or 8015M), Title 22 metals (6010, 7196, and 7471) and semivolatile organic compounds (SVOCs) (8270).

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Nine soil borings (2BB-2-20 and 21 and 2BB-2-24 through 2BB-2-30) were drilled throughout the Scrap Storage Yard. These borings were pushed to a depth of 10 feet bgs. Soil samples were collected according to the depth scheme presented in Table 1 and analyzed for VOCs (8260 or 8010/8020), petroleum hydrocarbons (418.1 and/or 8015M), Title 22 metals (6010, 7196, and 7471) and semivolatile organic compounds (SVOCs) (8270).

3.2.1.3 Buildings 54, 55, and 56

Three small buildings, Buildings 54, 55 and 56, are located near the gate to the yard on the northern border of Area 2 (Figure 2). These buildings are used for office space and storage of forklifts, service vehicles, and tools. A transformer substation containing PCBs is located adjacent to Building 54. Staining around and on the transformer indicated that oil has leaked from the transformer.

Two soil borings, 2BB-2-1 and 2BB-2-2, were drilled in this location. Both were pushed to a depth of 10 feet bgs. Soil samples were collected according to the depth scheme presented in Table 1 and analyzed for VOCs (8260 or 8010/8020), petroleum hydrocarbons (418.1 and/or 8015M), Title 22 metals (6010, 7196, and 7471), and PCBs (8080).

3.2.1.4 Area Borders with LADWP Electrical Substation

A LADWP electrical substation is located adjacent to the southeastern corner of Area 2 and borders the Scrap Storage Area (Figure 2). The electrical substation contains transformers that may contain PCBs.

Four borings (2BB-2-22, -23, -31, and -32) were drilled along the borders with the LADWP electrical substation. All borings were pushed to 25 feet bgs. Soil samples were collected according to the depth scheme presented in Table 1 and analyzed for VOCs (8260 or 8010/8020), petroleum hydrocarbons (418.1 and/or 8015M), Title 22 metals (6010, 7196, and 7471), semivolatile organic compounds (SVOCs) (8270) and PCBs (8080).

3.2.1.5 Area Border with Montrose Chemical

The Montrose Chemical facility is located adjacent to the eastern boundary of Area 2 and borders the eastern end of the Tool Storage Yard (Figure 2). Montrose is a known source of contamination to soil and groundwater and is currently on the National Priority List (NPL) due to the release of DDT and other chemicals to the environment.

Three borings (2BB-2-33 through 2BB-2-35) were drilled along the border with the Montrose Chemical Facility. The borings were pushed to 25 feet bgs. Soil samples were collected according to the depth scheme presented in Table 1 and analyzed for VOCs (8260 or 8010/8020), petroleum hydrocarbons (418.1 and/or 8015M), Title 22 metals (6010, 7196, and 7471), semivolatile organic compounds (SVOCs) (8270) and pesticides (8080).

3.2.2 Area 6

Area 6 occupies approximately 19 acres in the western portion of the Facility immediately north of Area 2 (Figure 1). Topography in Area 6 is essentially flat with an elevation of approximately 50 feet above mean sea level (MSL). Area 6 is comprised of a parking lot with active railroad tracks along the southwestern and western border. Area 6 is divided into two potential areas of concern: Area Border with ILM and the Parking Lot (Figure 2).

3.2.2.1 Area Border with International Light Metals

Area 6 borders ILM to the west, a RCRA site with known soil and groundwater contamination (Geraghty & Miller, 1996). Railroad tracks are located along the border to the west (Figure 2).

Six borings, 2BB-6-1 through 2BB-6-6, were drilled along the border with the ILM. The borings were drilled to 50 feet bgs using a hollow-stem auger. Soil samples were collected according to the depth scheme presented in Table 1 and analyzed for VOCs

(8260 or 8010/8020), petroleum hydrocarbons (418.1 and/or 8015M), Title 22 metals (6010, 7196, and 7471), and PCBs (8080). Supplemental continuous core boring, 6-4, was drilled at allow detailed examination of the subsurface soils. Soil samples were not collected for laboratory analysis from this boring.

3.2.2.2 Parking Lot

This area comprises most of Area 6 and has historically been primarily a parking lot (Figure 2).

Ten borings were drilled throughout the area on approximately 200 to 300 foot spacings. Nine of the borings (2BB-6-8 through 2BB-6-16) were pushed to 25 feet bgs. One boring (2BB-6-17) was drilled to 50 feet bgs using a hollow-stem auger. Soil samples were collected according to the depth scheme presented in Table 1 and analyzed for VOCs (8260 or 8010/8020), petroleum hydrocarbons (418.1 and/or 8015M), Title 22 metals (6010, 7196, and 7471), and PCBs (8080).

4.0 SOIL SAMPLING AND ANALYTICAL METHODS

This section provides the details of the borehole drilling and sampling methods, sample handling and the sample analytical program including QA/QC. Two hundred twenty-nine samples were collected in the field for laboratory analysis for the Phase II Soil Characterization of Parcel B. The field work was conducted during the period from 1 April through 7 May 1997. Areas 2 and 6 soil sampling locations are illustrated on Figure 2.

To accomplish the Phase II Soil Characterization objectives and document proper protocol for the work, an agency-approved Field Sampling Plan (FSP) was prepared and reviewed with field staff prior to initiating field work. Following the FSP, drilling and sampling methods were conducted in accordance with Kennedy/Jenks Consultants' Standard Operating Guides included in Appendix C. The Guides incorporate industry professional standards for routine sampling, and are designed to meet general regulatory agency requirements. A Site Health and Safety Plan was also prepared and reviewed with field staff prior to conducting field activities. Field safety meetings were conducted with Kennedy/Jenks Consultants and subcontractor staff at the beginning of each day to review physical and chemical hazards and emergency procedures related to the work.

4.1 Drilling and Soil Sampling

Field activities were initiated with selection of sampling locations, geophysical screening for underground obstructions, and coring of concrete paving to access subsurface soils. Supplemental geophysical screening and concrete coring were conducted during the drilling program when new borehole locations were included in the investigation.

Sampling was accomplished using direct-push, limited access direct-push, and hollow-stem auger drilling methods. Direct-push drilling was used on all 10-foot and 25-foot soil borings. The push technology uses a truck-mounted or portable hydraulically driven sampler or core barrel that allows penetration and standard sampling without the generation of drill cuttings. The sampler for the push tool was fitted with 2-foot-long, 1-

inch-diameter Tenite sleeves. Minimal cuttings were generated using this equipment. The boreholes were backfilled with a cement-bentonite grout and the surface capped with original material (e.g., concrete, asphalt or native soil). A total of 43 borings throughout Areas 2 and 6 were drilled and sampled using this equipment.

A CME-85 hollow-stem auger drilling rig was used to drill and sample the 50-foot soil borings. Sampling was conducted using a standard split-spoon sampler fitted with 2 1/2-inch-diameter, 6-inch-long brass sleeves. Cuttings from these borings were drummed and the holes were backfilled with a cement-bentonite grout and the surface capped with original material. A total of nine borings throughout Parcel B were drilled and sampled using this technique.

At each of the soil sampling locations, the soil types encountered were logged using the standard Unified Soil Classification System (USCS) and Munsell Color Chart notation. Boring logs are included in Appendix A.

Soil cuttings from hollow-stem auger boreholes were labeled, inventoried, and stored in drums at the Facility for later disposal.

4.2 Sample Handling

Soil samples were collected in Tenite, stainless steel, or brass sleeves and then covered with Teflon™ sheets, capped, labeled, and temporarily stored in ice-cooled containers. For each sampling interval, two or three sleeves (depending on length) were collected for laboratory analysis, one for each of the two mobile laboratories on location and one for the off-site laboratory. Samples were identified with the boring number and depth using the predetermined nomenclature presented in Section 3.1.1.

Samples were immediately labeled, placed in ice-cooled, insulated containers upon collection and transported to the on-site mobile laboratories at the completion of a boring, or transferred to the off-site laboratory by courier at the end of each day. Sample custody was maintained by the field sampler or field supervisor until transferred to one of the laboratories. Sample custody was documented on standard chain-of-custody forms. Chain-of-custody forms are included with the laboratory reports in Appendix B. (Please refer to Appendix B of the Parcel A, Phase II Soil Characterization Report, transmitted in July 1997, for laboratory analytical reports.)

4.3 <u>Sample Analytical Program</u>

Analytical work was conducted by California-certified laboratories using standard EPA test methods and appropriate state-required modifications. Soil samples were analyzed daily in two on-site mobile laboratories. One lab was equipped with two gas chromatography/mass spectrometry (GC/MS) systems with autosamplers capable of performing EPA Method 8260 for VOCs, while a second on-site mobile laboratory analyzed samples by EPA Method 418.1 and EPA Modified Method 8015. Soil samples were also taken to an off-site stationary laboratory daily by courier for analyses of VOCs and other COPCs, such as semi-volatile organic compounds (SVOCs), metals including hexavalent chromium, PCBs, and others. The off-site stationary laboratory also performed QA/QC checks of the on-site mobile laboratory detections.

Analytical methods were selected for COPCs based on the Phase I Preliminary environmental site assessments findings (Kennedy/Jenks Consultants, 1996, 1997a). Analytical methods selected and the number of samples analyzed for each boring are detailed in Table 1 and summarized below:

- All samples, except as noted, were analyzed for VOCs, including gasoline by an on-site mobile laboratory by EPA Method 8260. A limited number of samples collected by the limited access direct-push method were analyzed for VOCs and TRPH at the off-site stationary laboratory by EPA Methods 8010/8020 and 418.1. These samples were collected near the end of the field program after the on-site mobile laboratories had left the Facility.

- All samples were analyzed for petroleum hydrocarbons by an on-site mobile laboratory by EPA Method 418.1 for TRPH. TRPH detections were also analyzed in the mobile laboratory for hydrocarbon speciation by EPA Method 8015 modified.

- Samples collected at locations with potential metals concerns were analyzed by an off-site stationary laboratory by EPA Methods 6010, 7196, and 7471.

- Samples collected at locations with potential PCB concerns were analyzed by an off-site stationary laboratory by EPA Method 8080.

- Samples collected at locations with potential pesticide concerns were analyzed by an off-site stationary laboratory by EPA Method 8080.

- Ten percent of the on-site mobile laboratory non-detect results by EPA Method 8260 for VOCs were also analyzed by the off-site stationary laboratory as a QA/QC check.

- Ten percent of the mobile laboratory non-detect results by EPA Method 418.1 for TRPH were also analyzed by the off-site stationary laboratory as a QA/QC check.

- As an additional QA/QC check, all samples from four soil borings, 2BB-6-1 through 2BB-6-4, were analyzed for VOCs by EPA Method 8260 and TRPH by EPA Method 418.1 in both the on-site mobile and off-site stationary laboratories.

- Samples with Total VOCs greater than 200 μg/kg detected by EPA Method 8260 in the on-site mobile laboratory were also analyzed for VOCs at the off-site stationary laboratory for confirmation.

- Samples collected at locations with potential metals concerns were analyzed by an off-site stationary laboratory by EPA Methods 6010, 7196, and 7471.

- Samples collected at locations with potential PCB concerns were analyzed by an off-site stationary laboratory by EPA Method 8080.

- Samples collected at locations with potential pesticide concerns were analyzed by an off-site stationary laboratory by EPA Method 8080.

- Ten percent of the on-site mobile laboratory non-detect results by EPA Method 8260 for VOCs were also analyzed by the off-site stationary laboratory as a QA/QC check.

- Ten percent of the mobile laboratory non-detect results by EPA Method 418.1 for TRPH were also analyzed by the off-site stationary laboratory as a QA/QC check.

- As an additional QA/QC check, all samples from four soil borings, 2BB-6-1 through 2BB-6-4, were analyzed for VOCs by EPA Method 8260 and TRPH by EPA Method 418.1 in both the on-site mobile and off-site stationary laboratories.

- Samples with Total VOCs greater than 200 μg/kg detected by EPA Method 8260 in the on-site mobile laboratory were also analyzed for VOCs at the off-site stationary laboratory for confirmation.

5.0 INVESTIGATION RESULTS

This section presents the results of the Phase II Soil Characterization of Parcel B. The data are discussed by areas in the same order presented in Section 3.0. Each discussion begins with a brief summary of the specific borings associated with each area and the analytical tests performed.

The sections are sub-divided into organic and inorganic data for each location investigated. Organics include the results of analyses for VOCs, petroleum hydrocarbons, SVOCs, PCBs, and pesticides, while the inorganic section covers the results of analyses for Title 22 metals. Figures 7A through 7G and 8A through 8G present data for trichloroethene (TCE), and tetrachloroethene (PCE), respectively and Figures 9A-G, and 10A-G present data for total chromium and lead, respectively. Each series of figures includes seven groups, A through G, that show constituent concentrations detected at the following respective depths: 1 foot, 4 feet, 10 feet, 15 to 20 feet, 25 to 30 feet, 40 feet, and 50 feet bgs. These compounds and metals were selected as representing the most important COPCs detected in Areas 2 and 6 based on the known processes that operated in the area.

Specific Facility-wide ranges and average values for metals are presented in Table 2. References cited for the common range of background metals concentrations in soil include:

- Lindsay, Willard L., 1979, "Chemical Equilibria in Soils," John L. Willey & Sons, New York, New York.

- Shacklette, H.T., and Boerngen, J.G., 1984, "Element Concentrations in Soils and Other Surficial Materials in the Conterminous United States," USGS Professional Paper 1270, U.S. Government Printing Office, Washington, D.C.

Table 3 provides a summary of the VOC results from analyzes performed by the on-site mobile laboratory. Table 4 provides TRPH and TPH results from the mobile laboratory. Table 5 presents the results of the SVOC analyses. Overall, as shown in Table 6, there were seven background metals detected in all soil samples analyzed: 1) barium, 2) total chromium, 3) cobalt, 4) copper, 5) nickel, 6) vanadium, and 7) zinc.

5.1 Area 2

Thirty-five soil borings were drilled and 128 soil samples were analyzed at five potential areas of concern in Area 2 (Figure 2). The results are detailed in the following subsections. Distribution of chemical detections by depth for TCE, PCE, total chromium, and lead are presented in Figures 7 through 10.

5.1.1 Tool Storage Yard

Seventeen soil borings were drilled throughout the Tool Storage Yard. Sixteen were pushed to a depth of 10 feet bgs, and one boring (2BB-2-11B) was drilled to a depth of 50 feet bgs. Soil samples were collected according to the depth scheme presented in Table 1 and analyzed for VOCs (8260 or 8010/8020), petroleum hydrocarbons (418.1 and/or 8015M), Title 22 metals (6010, 7196, and 7471) and semivolatile organic compounds (SVOCs) (8270).

5.1.1.1 Organics

No VOCs exceeded the detection limit of 5 μg/kg in the samples from the Tool Storage Yard (Table 3).

Petroleum hydrocarbons were detected in 25 soil samples collected from 12 borings. In most borings TRPH (418.1) was detected at concentrations less than 270 mg/kg (Table 4). TRPH was detected at 3,200 mg/kg in the 1.5-foot bgs sample from boring 2BB-2-11B and at 6,000 mg/kg in the 4-foot bgs sample from boring 2BB-2-15. Petroleum hydrocarbons were not detected in the deeper samples from these borings. Motor oil-like hydrocarbons (8015M) were detected in eight of 25 samples that contained TRPH (Table 4). Seven samples contained motor oil-like hydrocarbons at concentrations ranging from 11 to 710 mg/kg. The 4-foot bgs sample from boring 2BB-2-17 contained motor oil-like hydrocarbons at 3,000 mg/kg.

Bis(2-ethylhexyl)-phthalate and phenol were the only SVOCs detected in samples from the Tool Storage Yard Area (Table 5). Bis(2-ethylhexyl)-phthalate was detected at concentrations ranging from 120 μg/kg to 270 μg/kg in seven samples from borings 2BB-2-6, -7, -10, -11B, -14, and -16. Phenol was detected at 170 μg/kg in the 1-foot bgs sample from boring 2BB-2-16.

5.1.1.2 Inorganics

The metals analyses were generally typical of the soils in this area. Barium, chromium, cobalt, copper, nickel, vanadium, and zinc were detected at concentrations that appear typical of background values (Tables 2 and 6). Lead was reported at a concentration of 7.0 mg/kg in the 2-foot bgs sample from boring 2BB-2-11B and 23 mg/kg in the 1-foot sample from boring 2BB-2-16. These lead concentrations are well below the TTLC of 1,000 mg/kg and less than ten times the 5.0 mg/l STLC (Table 2).

5.1.2 Scrap Storage Yard

Nine soil borings were drilled throughout the Scrap Storage Yard. These were pushed to a depth of 10 feet bgs. Soil samples were collected according to the depth scheme presented in Table 1 and analyzed for VOCs (8260 or 8010/8020), petroleum hydrocarbons (418.1 and/or 8015M), Title 22 metals (6010, 7196, and 7471) and semivolatile organic compounds (SVOCs) (8270).

5.1.2.1 Organics

The only VOC detected in the Scrap Storage Yard area was PCE, which was detected at 7.8 μg/kg and 5.2 μg/kg in the 1-foot bgs and 4-foot bgs samples respectively from boring 2BB-2-21 (Table 3).

Petroleum hydrocarbons at low concentrations were detected in this area. TRPH (418.1) was detected in eleven soil samples collected from five borings at concentrations ranging from 16 mg/kg to 450 mg/kg (Table 4). Five samples contained motor oil-like hydrocarbons (8015M) at concentrations ranging from 37 mg/kg to 280 mg/kg.

Several SVOCs (Table 5) that are coal-tar derivatives were detected at low concentrations in the 4-foot bgs sample from boring 2BB-2-21. They include Benz(a)anthracene (170 μg/kg), Chrysene (150 μg/kg), Fluoranthene (470 μg/kg), Phenanthrene (320 μg/kg), and Pyrene (300 μg/kg).

Bis(2-ethylhexyl)-phthalate was the only SVOC detected in samples from more than one boring. Bis(2-ethylhexyl)-phthalate was detected at concentrations ranging from 110 μg/kg to 230 μg/kg in four samples from borings 2BB-2-21, -27, and -30.

5.1.2.2 Inorganics

The metals analyses were generally typical of the soils in this area. Barium, chromium, cobalt, copper, nickel, vanadium, and zinc were detected at concentrations that appear typical of background values (Tables 2 and 6). Lead was reported at concentrations of 8.6 mg/kg and 2.7 mg/kg in the 1-foot bgs and 4-foot bgs samples respectively from boring 2BB-2-28. These lead concentrations are well below the TTLC of 1,000 mg/kg and less than ten times the 5.0 mg/l STLC (Table 2).

5.1.3 Buildings 54, 55, and 56

Two soil borings, 2BB 2-1 and 2BB-2-2, were drilled in this location. Both were pushed to a depth of 10 feet bgs. Soil samples were collected according to the depth scheme presented in Table 1. Samples from boring 2BB-2-1 were analyzed for VOCs (8260 or 8010/8020), petroleum hydrocarbons (418.1 and/or 8015M), and PCBs (8080). Samples from boring 2BB-2-2 were analyzed for PCBs only.

5.1.3.1 Organics

No VOCs exceeded the detection limit of 5 μg/kg in the samples from this area (Table 3).

Petroleum hydrocarbons were detected in all three samples from boring 2-1 (Table 4). TRPH (418.1) was detected at concentrations ranging from 61 mg/kg to 150 mg/kg. Motor oil-like hydrocarbons (8015M) were detected in the 4-foot bgs sample from boring 2BB-2-1 at 12 mg/kg.

No PCBs were detected in the soil samples collected from this area (Table 7).

5.1.4 Area Borders with LADWP Electrical Substation

Five of the borings drilled in the Scrap Storage Yard were located along the borders with the LADWP electrical substation. All four of the borings (2BB-2-22, -23, -31, and -32) were pushed to 25 feet bgs. Soil samples were collected according to the depth scheme presented in Table 1 and analyzed for VOCs (8260 or 8010/8020), petroleum hydrocarbons (418.1 and/or 8015M), Title 22 metals (6010, 7196, and 7471), semivolatile organic compounds (SVOCs) (8270), and PCBs (8080).

5.1.4.1 Organics

No VOCs exceeded the detection limit of 5 μg/kg in the samples from this area (Table 3).

Petroleum hydrocarbons were detected in the 1-foot bgs and 4-foot bgs samples from borings 2BB-2-23, and -24, the 1-foot bgs samples from 2BB-2-31 and -32, and the 25-foot bgs sample collected from boring 2BB-2-32 (Table 4). TRPH (418.1) was detected at concentrations ranging from 11 mg/kg to 360 mg/kg. Motor oil-like hydrocarbons (8015M) were detected in the 4-foot bgs samples from 2BB-2-24 and -23 at 66 mg/kg and 98 mg/kg, respectively.

Bis(2-ethylhexyl)-phthalate was the only SVOC detected in samples from this area (Table 5). It was detected at 3,600 μg/kg and 4,400 μg/kg in the 15-foot and 25-foot bgs samples collected from boring 2BB-2-31, respectively.

No PCBs were detected in the soil samples collected from this area (Table 7).

5.1.4.2 Inorganics

The metals analyses were generally typical of the soils in this area. Barium, chromium, cobalt, copper, nickel, vanadium, and zinc were detected at concentrations that appear typical of background values (Tables 2 and 6).

5.1.5 Area Border with Montrose Chemical

Three of the borings drilled in the Scrap Storage Yard were located along the border with the Montrose Chemical Facility. The borings were pushed to 25 feet bgs. Soil samples were collected according to the depth scheme presented in Table 1 and analyzed for VOCs (8260 or 8010/8020), petroleum hydrocarbons (418.1 and/or 8015M), Title 22 metals (6010, 7196, and 7471), semivolatile organic compounds (SVOCs) (8270) and pesticides (8080).

5.1.5.1 Organics

PCE, TCE, and chloroform exceeded the detection limit of 5 μg/kg in the samples from this area (Table 3). PCE and TCE were both detected in only the 15-foot bgs sample from boring 2BB-2-34 at 6.7 μg/kg and 5.1 μg/kg, respectively, Chloroform was detected in the 15-foot bgs samples from borings 2BB-2-34 and -35 at 6.3 μg/kg and 17 μg/kg, respectively.

Petroleum hydrocarbons were detected in the 1-foot bgs sample from boring 2BB-2-34 and the 1-foot, 20-foot, and 25-foot bgs samples from boring 2BB-2-35 (Table 4). TRPH (418.1) was detected at concentrations ranging from 12 mg/kg to 56 mg/kg.

Bis(2-ethylhexyl)-phthalate was the only SVOC detected in samples from this area (Table 5). It was detected at concentrations ranging from 120 μg/kg to 680 μg/kg in five samples.

Pesticides were not detected in any samples collected from this area (Table 8).

5.1.5.2 Inorganics

The metals analyses were generally typical of the soils in this area. Barium, chromium, cobalt, copper, nickel, vanadium, and zinc were detected at concentrations that appear typical of background values (Tables 2 and 6).

5.2 <u>Area 6</u>

A total of 17 soil borings were drilled and 101 soil samples were analyzed in two potential areas of concern in Area 6 (Figure 2). The results are detailed in the following subsections. Distribution of chemical detections by depth for TCE, PCE, total chromium, and lead are presented in Figures 7 through 10.

5.2.1 Area Border with International Light Metals

Six borings, 2BB-6-1 through 2BB-6-6, were drilled along the border with the ILM. The borings were drilled to 50 feet bgs. Soil samples were collected according to the depth scheme presented in Table 1 and analyzed for VOCs (8260 or 8010/8020), petroleum hydrocarbons (418.1 and/or 8015M), Title 22 metals (6010, 7196, and 7471), and PCBs (8080).

5.2.1.1 Organics

TCE was the only VOC that exceeded the detection limit of 5 μg/kg in the samples from this Area (Table 3). TCE was detected in 25 samples collected from all 6 borings drilled in this area at concentrations ranging from 5.9 μg/kg to 52 μg/kg. Depending on the boring, it was detected at depths ranging from 1 to 55 feet bgs.

Petroleum hydrocarbons were detected in the 2-foot bgs and 4.5 foot bgs samples from boring 2BB-6-5, and the 1.5 foot bgs sample from boring 2BB-6-6 (Table 4). TRPH (418.1) was detected at concentrations ranging from 23 mg/kg to 41 mg/kg.

No PCBs were detected in the soil samples collected from this area (Table 7).

5.2.1.2 Inorganics

The metals analyses were generally typical of the soils in this area. Barium, chromium, cobalt, copper, nickel, vanadium, and zinc were detected at concentrations that appear typical of background values (Tables 2 and 6).

5.2.2 Parking Lot

Ten borings were drilled throughout the area on approximately 200 to 300 foot spacings (Figure 2). Nine of the borings, 2BB-6-8 through 2BB-6-16, were pushed to 25 feet bgs. One boring (2BB-6-17) was drilled to 50 feet bgs using a hollow-stem auger. Soil samples were collected according to the depth scheme presented in Table 1 and analyzed for VOCs (8260 or 8010/8020), petroleum hydrocarbons (418.1 and/or 8015M), Title 22 metals (6010, 7196, and 7471), and PCBs (8080).

5.2.2.1 Organics

No VOCs exceeded the detection limit of 5 μg/kg in the samples from this area (Table 3).

Petroleum hydrocarbons were detected in 17 soil samples collected from eight borings. TRPH (418.1) was detected at concentrations ranging from 16 mg/kg to 200 mg/kg (Table 4). Six samples contained motor oil-like hydrocarbons (8015M) at concentrations ranging from 34 mg/kg to 110 mg/kg.

No PCBs were detected in the soil samples collected from this area (Table 7).

5.2.2.2 Inorganics

The metals analyses were generally typical of the soils in this area. Barium, chromium, cobalt, copper, nickel, vanadium, and zinc were detected at concentrations that appear typical of background values (Tables 2 and 6).

5.3 Quality Assurance Results

This section includes the results of the field quality assurance (QA) sample analysis, travel blanks and equipment rinsate blanks, VOC and TRPH QA results, and the QA check results on mobile laboratory total VOC concentrations greater than 200 μg/kg. In addition, the RWQCB performed audits of the mobile and stationary laboratories.

5.3.1 Field QA

Daily travel blanks were analyzed for VOCs (8260) to monitor the possibility of outside contamination of soil samples during transport to the stationary laboratory. Travel blank analytical testing resulted in no detections, indicating the samples were not impacted during transport (Appendix B).

Daily equipment rinsate blanks were analyzed to monitor the potential cross-contamination of soil samples by the sampling equipment. All laboratory analytical results were non-detect, indicating proper cleaning of field equipment between samples (Appendix B).

5.3.2 Laboratory QA

5.3.2.1 QA Analysis for VOCs

As a QA check on the results of the on-site mobile laboratory, 10 percent of non-detect EPA Method 8260 results were also analyzed at the off-site stationary laboratory. In addition, samples from borings 2BB-6-1 through 2BB-6-4 were analyzed for VOCs at both the on-site mobile laboratory and the off-site stationary laboratory. Comparison of the data is presented in Table 9.

The results of the 10% non-detected QA analysis by the off-site stationary laboratory agreed with the results of the on-site mobile laboratory. The results of the analyses of soil samples from borings 2BB-6-1 through 2BB-6-4 differed between the on-site mobile laboratory and the off-site stationary laboratory. The on-site mobile laboratory detected TCE in 17 of the 26 soil samples at concentrations at or below 52 μg/kg, while TCE was detected in only two of the 26 soil samples by the off-site stationary laboratory. TCE was detected by the off-site stationary laboratory in 2BB-6-3-1 at 15 μg/kg and by the on-site mobile laboratory at 23 μg/kg. The other TCE detection (2BB-6-2-1) by the off-site stationary laboratory was in a sample in which TCE was not detected by the on-site mobile laboratory. In addition, Toluene was detected in two soil samples in concentrations at or below 3.3 μg/kg, and PCE in one sample at 16 μg/kg by the off-site stationary laboratory only.

All of these VOC concentrations are low. The highest concentration detected was 52 μg/kg and the average was 18 μg/kg. This variability is not unreasonable when comparing the results of analyses of separate soil sample sleeves from the same sampling location. Due to the heterogeneous nature of the sediments, chemical concentrations could vary widely, even within the same 6-inch sample sleeve. The QA data show acceptable correlation between the analyses and substantiate the on-site mobile laboratory results.

5.3.2.2 QA Analysis for TRPH

As a QA check on the results of the on-site mobile laboratory, 10 percent of non-detect EPA Method 418.1 results were analyzed at the off-site stationary laboratory. In addition, samples from borings 2BB-6-1 through 2BB-6-4 were analyzed for TRPH at

both the on-site mobile laboratory and the off-site stationary laboratory. Comparison of the data is presented in Table 10.

The off site stationary laboratory results showed detections of TRPH by EPA Method 418.1 in 21 out of 41 samples (~50 percent). However, the on-site mobile laboratory used a screening detection limit of 20 mg/kg during the beginning of the program and then, on request by Kennedy/Jenks Consultants, changed to a detection limit of 10 mg/kg. The off-site stationary laboratory used a detection limit of 8 mg/kg. One of the 21 sample detections (2BB-2-22-25) from the off-site stationary laboratory is below the comparable detection limit of the on-site mobile laboratory, and three samples are right on the 10 mg/kg detection limit. This leaves 17 out of 41 samples (41 percent) that had TRPH detections by the off-site stationary laboratory, where the on-site mobile laboratory had non-detect. All of these samples had detections less than 73 mg/kg TRPH. This variability is not unreasonable when comparing the results of analyses of separate soil sample sleeves from the same sampling location. Due to the heterogeneous nature of the sediments, chemical concentrations could vary widely, even within the same 6-inch sample sleeve.

Because of the difficulty inherent in analyzing soil samples, the QA data are interpreted to show acceptable correlation between the analyses and substantiate the on-site mobile laboratory results.

5.3.3 QA Analysis of Total VOC>200 μg/kg

The purpose of the QA analysis of total VOC>200 μg/kg was to confirm the on-site mobile laboratory screening results. However, since none of the results for total VOCs were greater than 200 μg/kg, no samples from Areas 2 and 6 were tested for VOCs by the off-site stationary laboratory.

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6.0 CONCLUSIONS

The Phase II Soil Characterization of Parcel B was completed according to the Field Sampling Plan (FSP) that was developed from the Phase I environmental site assessments of the Facility. The data generated during this program will provide support for future site remediation, feasibility studies, groundwater investigations, and risk assessment, if necessary.

Parcel B is comprised of Areas 2 and 6, which were divided into areas of potential concern. Each of the areas of potential concern were investigated individually. Area 2 was divided into five areas of potential concern:

- Tool Storage Yard
- Scrap Storage Yard
- Buildings 54, 55, and 56
- Area Borders with LADWP Electrical Substation
- Area Border with Montrose Chemical

None of the areas of potential concern investigated in Area 2 were found to contain COPCs at levels such that they were designated areas of actual concern.

Area 6 was divided into two areas of potential concern:

- Area Border with International Light Metals
- Parking Lot

Neither of the areas of potential concern investigated in Area 6 were found to contain COPCs at levels such that they were designated areas of actual concern.

This section of the report begins with a brief description of the field program (Section 6.1), followed by a summary of subsurface soil conditions at the Facility (Section 6.2). Findings regarding each of the five areas of potential concern in Area 2 are summarized in Section 6.3. Findings regarding the two areas of potential concern in Area 6 are summarized in Section 6.4.

6.1 Field Program

The field program included drilling and geologic logging of 52 soil borings and collecting 229 soil samples in Areas 2 and 6. The soil samples were analyzed for the COPCs that could be present in each area of potential concern. The samples were analyzed for VOCs and petroleum hydrocarbons by an on-site state-certified laboratory. Selected samples also were analyzed at an off-site state-certified stationary laboratory for one or more additional parameters, including, but not limited to, SVOCs, PCBs, and metals.

The QA program included blank samples and confirmation analyses of selected soil samples. Analyses of the blank samples showed no indication that samples collected were inadvertently contaminated. Confirmation analyses at a stationary laboratory supported the mobile laboratory analyses. In addition, both the mobile and stationary laboratories were audited by the RWQCB for compliance with analysis procedure methods.

6.2 Subsurface Soils

Extensive information regarding the soils within 50 feet bgs at the Facility was developed from the drilling and geologic logging in the Phase II Soil Characterization. Four distinct subsurface units were identified. Three of these were correlated over the entire Facility, while the fourth pinches out on the northwest and dips below the depth drilled on the eastern portion of the property. The uppermost soils at the Facility consist predominantly of clay and silt. These fine-grained soils are present to about 22 feet bgs on the west and thicken to about 45 feet bgs on the east. Soils below these depths are predominantly sand and silty sand to the 50-foot maximum depth drilled.

6.3 Summary of Findings - Area 2

Analysis of the results of the Phase II Soil Characterization indicated there are no areas of concern in Area 2. Area 2 was divided into five areas of potential concern:

- Tool Storage Yard
- Scrap Storage Yard
- Buildings 54, 55, and 56
- Area Borders with LADWP Electrical Substation
- Area Border with Montrose Chemical.

None of these five areas of potential concern investigated were found to contain COPCs at levels such that they were designated areas of concern. The findings for each of these potential areas of concern are summarized below.

6.3.1 Tool Storage Yard

The Tool Storage Yard is used to store master tools used to make aircraft parts. Most of the tools are composed of lead. However, this area did not contain lead at concentrations high enough to be designated as an area of concern.

No VOCs were detected in this area.

Petroleum hydrocarbons were detected at low concentrations in 25 of 53 soil samples. TRPH (418.1) was detected at concentrations less than 270 mg/kg in 23 of the samples. TRPH (418.1) was detected at 1.5 feet bgs in boring 2-11B at 3,200 mg/kg and at 4 feet bgs in boring 2-15 at 6,000 mg/kg, but was not detected in the deeper samples from these same borings. Motor oil-like hydrocarbons (8015M) were detected in seven samples at concentrations less than 710 mg/kg, and at 4 feet bgs in boring 2-17 at 3,000 mg/kg.

The only SVOCs detected were bis(2-ethylhexyl)-phthalate and phenol. Bis(2-ethylhexyl)-phthalate was detected at concentrations ranging from 120 μg/kg to

270 μg/kg in seven of 53 samples at depths ranging from 1 foot bgs to 10 feet bgs, and phenol was detected at 170 μg/kg in the 1-foot bgs sample from boring 2-16.

Barium, chromium, cobalt, copper, nickel, vanadium, and zinc were detected at concentrations that appear typical of background values. Lead was detected in two borings, 2-16 and 2-11B, at 1 foot bgs to 2 feet bgs, respectively, at 7.0 mg/kg and 23 μg/kg, which is well below the TTLC of 1,000 mg/kg and less than ten times the STLC.

6.3.2 Scrap Storage Yard

The Scrap Storage Yard is used to store miscellaneous equipment and material, including a waste oil pump and roll-off bins that were used to collect and transport waste oil. However, this area did not contain petroleum hydrocarbons at concentrations high enough to be designated as an area of concern.

PCE was detected at boring 2-21 at a concentration of 7.8 μg/kg and 5.2 μg/kg in the 1-foot and 4-feet bgs samples, respectively.

Petroleum hydrocarbons, including TRPH (418.1) and motor oil-like hydrocarbons (8015M), were detected at concentrations ranging from 16 mg/kg to 450 mg/kg in 11 of 21 samples at shallow depths of 1 foot to 4 feet bgs.

SVOCs were detected in four of 27 samples at concentrations less than 230 μg/kg. Certain SVOCs — benz(a)anthracene, chrysene, fluoranthene, phenanthrene, and pyrene — were detected in the 4-foot bgs sample from boring 2BB-2-21 at concentrations ranging from 150 mg/kg to 470 mg/kg. Bis(2-ethylhexyl)-phthalate was detected at concentrations ranging from 110 μg/kg to 230 μg/kg in four samples from borings 2BB-2-21, -27, and -30 at depths to 10 feet bgs.

Barium, chromium, cobalt, copper, nickel, vanadium, and zinc were detected at concentrations that appear typical of background values. Lead was reported in boring 2-28 at 8.6 mg/kg and 2.7 mg/kg in the 1-foot and 4-feet bgs samples. These lead concentrations are well below the TTLC of 1,000 mg/kg and less than ten times the STLC.

6.3.3 Buildings 54, 55, and 56

Buildings 54, 55 and 56 are used for office space and storage of forklifts, service vehicles, and tools. A transformer substation containing PCBs is located adjacent to Building 54. Staining around and on the transformer indicated that oil has leaked from the transformer. However, no PCBs were detected in this area.

No VOCs were detected in this area.

Petroleum hydrocarbons, including TRPH (418.1) and motor oil-like hydrocarbons (8015M), were detected in the samples from boring 2BB-2-1 at concentrations ranging from 12 mg/kg to 150 mg/kg at depths ranging from 1 foot to 10 feet bgs.

No PCBs were detected in the soil samples collected from this area.

6.3.4 Area Borders with LADWP Electrical Substation

A LADWP electrical substation is located adjacent to the southeastern corner of Area 2. The electrical substation contains transformers that may contain PCBs. However, no PCBs were detected in the samples tested for the 2BB investigation of Parcel B of the BRC C-6 Facility.

No VOCs were detected in this area.

Petroleum hydrocarbons, including TRPH (418.1) and motor oil-like hydrocarbons (8015M), were detected in seven of 24 samples at concentrations ranging from 11 mg/kg to 360 mg/kg. Six of these detections were at 1 foot or 4 feet bgs, and one detection (11 mg/kg) was at 25 feet bgs.

The only SVOC detected in this area was bis(2-ethylhexyl)-phthalate, which was detected at 3,600 μg/kg and 4,400 μg/kg in the 15-foot and 25-foot bgs samples collected from boring 2-31, respectively.

No PCBs were detected in this area.

Barium, chromium, cobalt, copper, nickel, vanadium, and zinc were detected at concentrations that appear typical of background values.

6.3.5 Area Border with Montrose Chemical

The Montrose Chemical facility is located adjacent to the eastern boundary of Area 2. Montrose is a known source of contamination to soil and groundwater and is currently on the NPL due to the release of DDT and other chemicals to the environment. However, no DDT or other pesticides were detected in the samples tested for the 2BB investigation of Parcel B of the BRC C-6 Facility.

PCE and TCE were both detected in only one soil sample, 2-34 at a depth of 15 feet bgs and at a concentration of 6.7 μg/kg and 5.1 μg/kg, respectively. Chloroform was detected in the 15-foot bgs samples from borings 2-34 and 2-35 at 6.3 μg/kg and 17 μg/kg, respectively.

Petroleum hydrocarbons as TRPH (418.1) were detected in four of 18 samples at concentrations ranging from 12 mg/kg to 56 mg/kg. The highest concentration (56 mg/kg) was detected at 1 foot bgs at 2-35, while concentrations of 12 mg/kg and 13 mg/kg were detected in boring 2-35 at 20 feet and 25 feet bgs, respectively.

The only SVOC detected in this area was bis(2-ethylhexyl)-phthalate, which was detected at concentrations ranging from 120 μg/kg to 680 μg/kg in borings 2-33 and 2-34 at depths ranging from 1 foot bgs to 20 feet bgs.

No pesticides were detected in this area.

Barium, chromium, cobalt, copper, nickel, vanadium, and zinc were detected at concentrations that appear typical of background values.

6.4 Summary of Findings - Area 6

Analysis of the results of the Phase II Soil Characterization indicated that there are no areas of concern in Area 6. Area 6 was divided into two areas of potential concern:

- Area Border with Montrose Chemical
- Parking Lot

Neither of these two areas of potential concern investigated in Area 6 were found to contain COPCs at levels such that they were designated areas of concern. The findings for each of these areas of potential concern are summarized below.

6.4.1 Area Border with International Light Metals

ILM is located adjacent to the western boundary of Area 6. The ILM site is a known source of soil and groundwater contamination.

TCE was detected in 25 of 40 samples collected from all 6 borings drilled in this area at concentrations ranging from 5.9 μg/kg to 52 μg/kg. Depending on the boring, it was detected at depths ranging from 1 to 55 feet bgs.

Petroleum hydrocarbons as TRPH (418.1) were detected in three samples, two from boring 6-5 and one from boring 6-6, at concentrations ranging from 23 mg/kg to 41 mg/kg and at shallow depths ranging from 1.5 feet to 4.5 feet bgs.

No PCBs were detected in this area.

Barium, chromium, cobalt, copper, nickel, vanadium, and zinc were detected at concentrations that appear typical of background values.

6.4.2 Parking Lot

This area comprises most of Area 6 and has historically been primarily a parking lot.

No VOCs were detected in this area.

Petroleum hydrocarbons, including TRPH (418.1) and motor oil-like hydrocarbons (8015M), were detected in 17 of 61 samples at concentrations ranging from 16 mg/kg to 200 mg/kg and at depths ranging from 1 foot and 10 feet bgs.

No PCBs were detected in this area.

Barium, chromium, cobalt, copper, nickel, vanadium, and zinc were detected at concentrations that appear typical of background values.

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